

CLAIMS

1. An injector system, comprising:
 - 5 a housing defining a lumen and having an output end and a driving system connection end;
 - a mixing member extending within the lumen from the driving system connection end to at least the output end, the mixing member being rotatable within the lumen; and
 - 10 a needle assembly coupled to the output end of the housing, for coupling to a needle.
2. The injector system of claim 1, wherein the mixing member comprises a helical element.
3. The injector system of claim 2, wherein the helical element is an auger.
- 15 4. The injector system of claim 1, further comprising a driver guide, the driver guide positioning the mixing member within the lumen.
5. The injector system of claim 1, wherein the needle assembly is coupled to a needle.
- 20 6. The injector system of claim 1, further comprising an injectable material.
7. The injector system of claim 6, wherein the injectable comprises a shear-sensitive injectable material.
- 25 8. The injector system of claim 7, wherein the shear-sensitive injectable material comprises a crosslinked material, a carrier, and a matrix material.
9. The injector system of claim 7, wherein the injectable material further comprises a
30 bioactive molecule.

10. The injector system of claim 7, wherein the housing comprises a feeder portion and a reservoir portion, and wherein the mixing member is rotatable within the feeder portion and can move linearly within the reservoir portion.

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11. A driving system for use with an injector system, the injector system comprising a tubular member and a mixing member extending through the tubular member, the driving system comprising:

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a drive mechanism;

an actuator coupled to the drive mechanism to actuate the drive mechanism; and

an interfacing member coupled to the drive mechanism for coupling with the

mixing member to rotate the mixing member when the interfacing member is driven by the drive mechanism.

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12. The driving system of claim 11, wherein the drive mechanism comprises a motor.

13. The driving system of claim 12, wherein the motor is a high speed, low torque motor.

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14. The driving system of claim 12, wherein the motor is coupled to an energy source.

15. The driving system of claim 14, wherein the energy source is a battery.

- 25 16. The driving system of claim 11, wherein the actuator comprises a switch.

17. The driving system of claim 11, wherein the driving system is coupled to the injector system.

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- 30 18. A coupling system for use with a tube of a syringe, comprising:

a housing for coupling to the tube of the syringe;
a drive mechanism disposed within the housing;
a mixing member for coupling to the drive mechanism, the mixing member for
extending into the tube of the syringe and being rotatable within the tube of the syringe to
5 mix and deliver an injectable from the tube of the syringe; and
an actuator coupled to the drive mechanism to actuate the drive mechanism and
thereby cause rotation of the mixing member.

- 10 19. The coupling system of claim 18, wherein the mixing member is coupled to the drive mechanism.
20. The coupling system of claim 18, wherein the housing further comprises a mating portion, the mating portion capable of mating with the tube of the syringe.
- 15 21. The coupling system of claim 20, wherein the tube of the syringe is coupled to the mating portion.
22. The coupling system of claim 21, wherein the tube of the syringe comprises an injectable material.
- 20 23. The coupling system of claim 18, wherein the housing comprises finger grips.
24. A delivery system, comprising:
a housing defining a lumen and having an output end and a driving system
25 connection end; and
a mixing member extending within the lumen from the driving system connection end to at least the output end, the mixing member being rotatable within the lumen; and
a drive mechanism coupled to the mixing member, to rotate the mixing member
when the drive mechanism is actuated.
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25. The delivery system of claim 24, further comprising an actuator, the actuator coupled to the drive mechanism to actuate the drive mechanism.